

Remarks

This Application has been carefully reviewed in light of the Office Action mailed January 25, 2006. At the time of the Office Action, claims 1-20 were pending, claims 1-18 were rejected and claims 19-20 were withdrawn. Applicants have amended claims 1, 3, 5, 11, 12, 14, 15 and 18 and have added claims 21-26 to clarify the subject matter in which the Applicants claim as their invention and to advance prosecution in this case. No new matter has been introduced by these amendments. Applicants do not admit that these amendments were necessary as a result of any cited art. Applicants respectfully request reconsideration and favorable action in this case.

Applicants thank the Examiner for providing insightful comments during the telephonic interview of May 23, 2006. Applicants have thoughtfully considered the Examiner's comments in drafting this Response.

Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *De Sorgia* (U.S. Patent No. 3,943,046) in view of the knowledge of one of ordinary skill in the art. Claims 1-8 also stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *De Sorgia* in view of *Mibu* (U.S. Patent No. 4,276,479). Applicants respectfully request reconsideration of this rejection of claims 1-8 because neither *De Sorgia* nor the proposed *De Sorgia-Mibu* combination teach, suggest, or disclose various aspects of pending claims 1-8.

Claim 1 recites a method for "forming a substantially cured clearcoat being substantially free of shadowing effects ... [from] a UV curable clearcoat composition [applied] to [an] article having a three-dimensional surface." The claimed method includes "exposing the UV curable clearcoat composition to a second diffused light source ... to cure a second portion of the UV curable clearcoat composition."

De Sorgia does not teach, disclose or suggest at least (1) "exposing the UV curable clearcoat composition to a second diffused light source"; or (2) the resulting

“substantially cured clearcoat being substantially free of shadowing effects.” *De Sorgia*’s teachings do not address overcoming the problem of shadowing effects, instead focusing on curing under ambient conditions while reducing the effects of polymerization-inhibiting oxygen. Moreover, *De Sorgia* does not teach, disclose or suggest exposing the UV curable clearcoat composition to a second diffused light source, which in combination with the first exposure step, provides the clearcoat without shadowing effects.

Further, *Mibu* does not cure the defective teachings of *De Sorgia*. For instance, *Mibu* does not teach, disclose or suggest exposing a UV curable clearcoat composition to a second diffused light source, as claimed. For at least these reasons, claim 1 is patentable in light of the *De Sorgia* reference, the proposed *De Sorgia-Mibu* combination, and the other references of record. Applicants request reconsideration and allowance of claim 1.

Further, claims 2-8, which depend from claim 1, are patentable for the above stated reasons, as well as their own limitations. For example, claim 5 recites that “the second source comprises a fluorescent diffuse lighting source.” Neither the *De Sorgia* reference, nor the proposed *De Sorgia-Mibu* combination teaches or suggests a second source comprising a fluorescent diffuse lighting source. For at least these reasons, claims 2-8 are patentable in light of the *De Sorgia* reference, the proposed *De Sorgia-Mibu* combination, and the other references of record. Applicants respectfully request reconsideration and allowance of claims 2-8.

Claims 9-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *De Sorgia* in view of *Takamizawa* (U.S. Patent No. 4,359,369). Claims 9-10 are also rejected under 35 U.S.C. § 103(a) as being unpatentable over *De Sorgia* in view of *Mibu*, and further in view of *Takamizawa*. Claims 9-10 depend from claim 1, which Applicants have shown above to be allowable, and are allowable for at least this reason. In addition, claims 9-10 recite further patentable distinctions over the references of record. However, to avoid burdening the record and in view of the clear allowability of claim 1, Applicants do not specifically address these reasons in this response. Applicants reserve the right to present these

reasons in a future response if appropriate. For at least these reasons, Applicants respectfully request reconsideration and allowance of claims 9-10.

Claims 11, 13 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *De Sorgia* in view of *Takamizawa*, and further in view of *Keyl* (U.S. Patent No. 3,511,687). Claims 11, 13, and 14 are also rejected under 35 U.S.C. § 103(a) as being unpatentable over *De Sorgia* in view of *Mibu*, *Takamizawa*, and further in view of *Keyl*. Claims 11, 13 and 14 depend from claim 1, which Applicants have shown above to be allowable, and are allowable for at least this reason.

In addition, claims 11, 13 and 14 recite further patentable distinctions over the references of record. For example, claim 11 recites that “the first average intensity comprises 0.1-100 W/m² at 260-400 nm”. This claimed range of intensities is not taught by the proposed combination. The Examiner’s Office action does not provide otherwise. Instead, the Examiner posits that intensity is “a result effective variable”, thereby rendering the range obvious in light of the teachings of the proposed combination. Assuming *arguendo* that intensity is “a result effective variable”, the Examiner’s *prima facie* case of obviousness can be overcome by showing the criticality of the claimed range. *In re Woodruff*, 16 USPQ2d 1934 (Fed. Cir. 1990). The claimed intensity range is critical to Applicants’ invention of a method for curing a UV clearcoat without substantial shadowing effects. Neither the criticality nor the claimed range are taught or suggested by the proposed combination. Furthermore, the benefit result of obtaining a cured three-dimensional article suitable for commercial use by operating within this range is supported by Example 5 of the Specification. For at least this reason, claim 11 is patentable over the proposed combination and the other references of record. Applicants respectfully request reconsideration and allowance of claims 11, 13 and 14.

Moreover, new claims 26 recites the extent of cure needed to provide a cured three-dimensional article suitable for commercial use, as supported by Example 5 of the Specification. Claim 26 recites “the first period of time is sufficient to cure the first portion

at least 85% and the second period of time is sufficient to cure the second portion at least 85%". The references of record do not provide a method in which a number of spaced apart flashes of light is utilized to provide the amount of curing recited in claims 26. For at least this reason, these claims are allowable over the references of record.

Moreover, new claims 21-25, which depend from claim 14, are also patentable over the references of record. For example, claim 21 recites "the number of spaced apart flashes of light is greater than 5." The *De Sorgia* and *Mibu* references do not provide a specific number of flashes for use in their curing methods. The beneficial result of using this critical range in combination with the claimed method is supported by Example 5, and is not taught or suggested by the references of record. As another example, claim 22 recites "the number of spaced apart flashes of light is no more than 25". The beneficial result of using this critical number of flashes in the claimed method is supported by Example 5, and is not taught or suggested by the references of record. Claim 24 recites "the first average light intensity comprises 0.1-8 W/m² at 260-400 nm." The beneficial result of using this critical range in the claimed method is supported by Example 5, and is not taught or suggested by the references of record. As another example, claim 25 recites "the cumulative intensity of the spaced apart flashes comprises 0.1-0.3 J/m² at 260-400 nm."¹ The beneficial result of using this critical range in the claimed method is supported by Example 5, and is not taught or suggested by the references of record. Applicants respectfully request allowance of claims 21-25.

Claim 12 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *De Sorgia* in view of *Keyl*. Claim 12 also stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *De Sorgia* in view of *Mibu*, and further in view of *Keyl*. Claim 12 depends from claim 1, which Applicants have shown above to be allowable, and are allowable for at least this reason.

¹ Example 5 provides exposing a UV curable clearcoat composition to 25 flashes of 1.5 msec length of a VISIT xenon lamp having an average intensity of 8 W/m² (8 J/m²s). Therefore, each flash generates 0.012 J/m² (0.0015 s * 8 J/m²). The cumulative intensity is 0.3 J/m² (0.012 J/m² * 25).

In addition, claim 12 recites further patentable distinctions over the references of record. Claim 12 recites that “the second average intensity comprises 0.01-1.0 W/m² at 300-400 nm”. This claimed range of intensities is not taught by the proposed combination. The Examiner’s Office action does not provide otherwise. Applicants respectfully request reconsideration and allowance of claim 12.

Claims 15-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *De Sorgia*. *De Sorgia* does not teach, disclose or suggest the pending claims 15-18. Claim 15 recites a method for “forming a substantially cured clearcoat being substantially free of shadowing effects ... [from] a UV curable clearcoat composition [applied] to [a] three-dimensional article.” The claimed method includes “exposing the UV curable clearcoat composition to a second diffused light source ... to cure a second portion of the UV curable clearcoat composition.” *De Sorgia* does not teach, disclose or suggest at least (1) “exposing the UV curable clearcoat composition to a second diffused light source”; or (2) the resulting “substantially cured clearcoat being substantially free of shadowing effects.” To the contrary, at best, *De Sorgia*’s teachings do not address overcoming the problem of shadowing effects, instead focusing on carrying out curing in ambient conditions while reducing the effects of polymerization-inhibiting oxygen. Moreover, *De Sorgia* does not teach, disclose or suggest exposing the UV curable clearcoat composition to a second diffused light source, which in combination with the first exposure step, provides the clearcoat without shadowing effects. *De Sorgia* also does not teach, disclose or suggest (1) “a first light source having a first average light intensity of 0.1-100 W/m² at 260-400 nm”; or (2) “a second average light intensity of 0.01-1.0 W/m² at 300-400 nm” to provide the clearcoat without shadowing effects. For at least these reasons, claim 15 is patentable in light of the *De Sorgia* reference and the other references of record. Applicants respectfully request reconsideration and allowance of claim 15.

Further, claims 16-18, which depend from claim 15, are patentable for the above stated reasons, as well as their own limitations. For example, claim 18 recites that “the second source comprises a fluorescent diffuse lighting source.” The *De Sorgia* referencedoes not teach or suggests a second source comprising a fluorescent diffuse lighting source. For at

least these reasons, claims 16-18 are patentable in light of the *De Sorgia* reference, and the other references of record. Applicants respectfully request reconsideration and allowance of claims 16-18.

The Examiner opines that the priority application, Application No. 60/432,973, fails to provide adequate support or enablement for the subject matter of claim 1 (relative intensities of the first and second average intensities) and claim 15 (particular energy densities and wavelengths). Applicants believe that this subject matter is supported and enabled by the priority application, however, in order to expedite prosecution of this Application, Applicants have amended the specification to remove the priority claim.


CONCLUSION

Applicants have made a genuine effort to respond to the Examiner's objections and rejections in advancing the prosecution of this case. Applicants believe all formal and substantive requirements for patentability have been met and that this case is in condition for allowance, which action is respectfully requested.

Please charge the additional claims fees to the Deposit Account of Applicants' assignee, Ford Global Technologies LLC, No. 06-1510 or 06-1505 — a duplicate copy of the first page of this paper is enclosed for this purpose.

Respectfully submitted,

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